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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,676	09/26/2003	Daniel L. Callahan	200301923-2	9807

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HEWLETT-PACKARD COMPANY
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EXAMINER

VORTMAN, ANATOLY

ART UNIT PAPER NUMBER

2835

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/672,676

Applicant(s)

CALLAHAN ET AL.

Examiner

Anatoly Vortman

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-45 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-32 and 35-45 is/are rejected.
- 7) ☒ Claim(s) 33 and 34 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/26/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/26/03</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “chassis” and the “input device” recited in claims 30 and 37 must be shown. Also the columns connected in series with the isolating mount as recited in claims 28 and 44 must be shown. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 28 and 44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Neither specification nor drawings teach the columns connected in series with the isolating mount.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 21-26, 29, 31, 35, 38-43, and 45, are rejected under 35 U.S.C. 103(a) as being unpatentable over US/6,774,315 to Pierson et al., (Pierson) taken alone.

Regarding claims 21, 22, 29, 31, 32, and 35, Pierson disclosed (Fig. 10): a device for maintaining a chip (23) in a desired relationship with a printed wiring board (33), said

Art Unit: 2835

device displays elastic response to the applied loads, comprising: a plurality of interposer columns (27) connected in parallel with an isolating mount (1) and possessing total spring constant (inherently) connecting the chip (23) to the printed wiring board (33) and allowing relative motion between the chip (23) and the printed wiring board (33); and the isolating mount (1) compressed between the chip (23) and the printed wiring board (33); wherein said isolating mount (1) possesses the damping value (inherently) and adapted to dampen vibrational motion transmitted by said interposer columns (27) between the printed wiring board (33) and the chip (23), but did not explicitly specified that said chip is a microprocessor.

The Official Notice is taken of the fact that microprocessor chips are high performance IC chips, and it would have been obvious to a person of ordinary skill in IC chips arts to use the chip mounting arrangement as taught by Pierson for mounting of the microprocessor chip to the wiring board.

Regarding claims 23 and 24, Pierson disclosed that said isolating mount (1) comprises a continuous piece of material (3) and plurality pieces of material (27) that contact the periphery of the chip (23), (Fig. 10).

Regarding claim 25, the isolating mount (1) would inherently be resistant to temperatures below 130°C, since normal ambient temperature (a room temperature is usually 20°C-25°C) is way below 130°C.

Regarding claim 26, since the resilient materials with a loss factor of at least 0.010 have been notoriously known in the IC chips arts at the time the invention was made, it would have been obvious to a person of ordinary skill in IC chips arts at the time the invention was made to select such a material for the isolating mount of Pierson in

Art Unit: 2835

order to provide desirable isolation for the IC chip, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Alternatively, since the loss factor of the resilient material is a result effective variable, wherein the result is the dumping function of said resilient material, it would have been obvious to one having ordinary skill in the chip arts at the time the invention was made to select any desirable value for said loss factor, including the aforementioned at least 0.010, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 38-43 and 45, the method steps recited in the claims are inherently necessitated by the device structure as taught by Pierson.

6. Claims 30 and 37, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierson view of US/6,038,128 to Hood, III et al., (Hood) (cited in IDS).

Regarding claims 30 and 37, Pierson disclosed all, but the chassis and the input device.

Hood disclosed (Fig. 1) a computer system (10) comprising a chassis (12); an input device (24); and a system board (14) mounted inside the chassis (12), wherein said system board (14) includes a component (a microprocessor IC chip) (16) mounted thereto.

Art Unit: 2835

Since inventions of Pierson and Hood are from the same field of endeavor (IC chips), the purpose of the IC chip mounting arrangement having an isolating mount disclosed by Pierson would be recognized in the device of Hood.

It would have been obvious to a person of ordinary skill in the IC chips arts at the time the invention was made to use the IC chip mounting arrangement disclosed by Pierson for mounting of the microprocessor chip (16) of Hood on a system board (14), in order to enhance the damping of vibrations.

7. Claims 27 and 36, are rejected under 35 U.S.C. 103(a) as being unpatentable over Pierson in view of US/6,501,658 to Pearson et al., (Pearson).

Pierson disclosed all, but a heat sink mounted via spring.

Pearson disclosed (Fig. 4-10) an IC chip package having heat sink mounted on springs in order to reduce stress on the chip (column 1, lines 19+).

Since inventions of Pierson and Pearson are from the same field of endeavor (mounting arrangements for IC chips) the purpose of the spring mounted heat sink disclosed by Pearson would be recognized in the invention of Pierson.

It would have been obvious to a person of ordinary skill in the chip's arts at the time the invention was made to provide said chip mounting arrangement of Pierson with the spring mounted heat sink in order to facilitate cooling of the Pierson's chip and to reduce stress on said chip imposed by the heat sink.

Allowable Subject Matter

Art Unit: 2835

8. Claims 33 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

regarding claim 33, the claim recites: "Kelvin system", and

regarding claim 34, the claim recites: "Maxwell system".

The aforementioned limitations in combination with all remaining limitations of the respective claims are believed to render said claims 33 and 34 patentable over the art of record.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure:

US/6541867, 6412546, 6400577, 6356445, 6282093, 6247228, 6023413, 5958556, 5920120, 5770891, 5757621, 5754400, 5691041, 5681647, 5389819, and 4721996 disclosed mounting arrangements for IC chips.

The Examiner would like to direct the Applicant's attention to the fact that US/4954878 to Fox et al (cited on IDS) would have been also sufficient for rejection under 35 USC 102/103 of at least independent claims of the instant application.

Art Unit: 2835

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anatoly Vortman whose telephone number is 571-272-2047. The examiner can normally be reached on Monday-Friday, between 10:00 am and 6:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Lynn Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anatoly Vortman
Primary Examiner
Art Unit 2835

AV.

A handwritten signature in black ink, appearing to read 'A. Vortman', followed by a horizontal line.